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File: PGPE

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DOCUMENT-IDENTIFIER: US 20070207526 A1

TITLE: Norovirus and sapovirus antigens

Description of Disclosure:

[0439] The CpG's can include nucleotide modifications/analogs such as phosphorothioate modifications and can be double-stranded or single-stranded. Optionally, the guanosine may be replaced with an analog such as 2'-deoxy-7-deazaguanosine. See Kandimalla, et al., "Divergent synthetic nucleotide motif recognition pattern: design and development of potent immunomodulatory oligodeoxyribonucleotide agents with distinct cytokine induction profiles", Nucleic Acids Research (2003) 31(9): 2393-2400; WO02/26757 and WO99/62923 for examples of possible analog substitutions. The adjuvant effect of CpG oligonucleotides is further discussed in Krieg, "CpG motifs: the active ingredient in bacterial extracts?", Nature Medicine (2003) 9(7): 831-835; McCluskie, et al., "Parenteral and mucosal prime-boost immunization strategies in mice with hepatitis B surface antigen and CpG DNA", FEMS Immunology and Medical Microbiology (2002) 32:179-185; WO98/40100; U.S. Pat. No. 6,207,646; U.S. Pat. No. 6,239,116 and U.S. Pat. No. 6,429,199.

Description of Disclosure:

[0613] It has already been demonstrated that mucosal and systemic immune responses to antigens, such as Helicobacter pylori antigens can be enhanced through mucosal priming followed by systemic boosting immunizations (see Vajdy et al. (2003) Immunology 110: 86-94). In a preferred embodiment, the method for treating an infection by a Norovirus or Sapovirus, comprises mucosally administering to a subject in need thereof a first immunogenic composition comprising one or more Norovirus or Sapovirus antigens followed by parenterally administering a therapeutically effective amount of a second immunogenic composition comprising one or more Norovirus or Sapovirus antigens.

Description of Disclosure:

[0619] Dosage treatment can be according to a single dose schedule or a multiple dose schedule. Multiple doses may be used in a primary immunization schedule and/or in a booster immunization schedule. In a multiple dose schedule, the various doses may be given by the same or different routes, e.g. a parenteral prime and mucosal boost, a mucosal prime and parenteral boost, etc.